

# ThinkPad W541 Platform Specifications

Product Specifications Reference (PSREF)

Processor	4th Generation Intel® Core™ i5 / i7 / i7 Extreme Processor								Dimensions <sup>3</sup>	15.6" (WxDxH): 14.83" x 9.77" x 1.10-1.16"; 376.6mm x 248.1mm x 27.9-29.5mm			
	Processor Number	# of Cores	# of Threads	Base Frequency	Max Turbo Frequency	Cache	Memory Speed	Processor Graphics	Weight <sup>2</sup>	6-cell: starting at 5.57 lb (2.53 kg); 9-cell: starting at 5.95 lb (2.70 kg)			
	i5-4210M	2	4	2.6 GHz	3.2 GHz	3MB	DDR3L-1600	Intel HD Graphics 4600	Case material	Glass-Fiber Reinforced Plastic			
	i5-4340M			2.9 GHz	3.6 GHz	3MB			Smart card reader	Optional: Smart card reader			
	i7-4600M			2.9 GHz	3.6 GHz	4MB			ExpressCard	One slot (ExpressCard/34)			
	i7-4710MQ	4	8	2.5 GHz	3.5 GHz	6MB			Media reader	4-in-1 reader (MMC, SD, SDHC, SDXC), supports UHS-II SD card			
	i7-4810MQ			2.8 GHz	3.8 GHz	6MB			Ports	Two USB 3.0, two USB 2.0 (one Always On), VGA, Mini DisplayPort / Thunderbolt, Ethernet (RJ-45), Dock connector			
	i7-4910MQ			2.9 GHz	3.9 GHz	8MB			Camera (optional)	HD720p resolution, low light sensitive, fixed focus			
i7-4940MX	3.1 GHz			4 GHz	8MB	Audio support			HD Audio, Realtek® ALC3232 codec / stereo speakers, 1W x 2 / dual array microphone, combo audio/microphone jack				
Graphics	Intel HD Graphics 4600 in processor and NVIDIA Quadro® K1100M or K2100M, 2GB memory; supports external analog monitor via VGA and digital monitor via Mini DisplayPort / Thunderbolt™; supports three independent displays; Max resolution: 3840x2160@60Hz (DisplayPort via Mini DisplayPort cable); 3840x2160@60Hz (Thunderbolt); 1920x1200@60Hz (VGA)								Keyboard	6-row, spill-resistant, multimedia Fn keys, numeric keypad, optional LED backlight			
Chipset	Mobile Intel QM87 Express Chipset dual-core model: 16GB max <sup>7</sup> , two 204-pin SO-DIMM sockets quad-core model: 32GB max, four 204-pin SO-DIMM sockets, only 4+4, 8+8, 4+4+4+4, and 8+8+8+8 combinations supported All: PC3-12800 1600MHz DDR3L, non-parity, dual-channel capable								UltraNav™	TrackPoint® pointing device and buttonless Mylar surface touchpad, multi-touch			
									Security	Power-on password, hard disk password, supervisor password, security keyhole			
Memory									Security chip	Trusted Platform Module, TCG 1.2-compliant			
									ThinkEngine	Delivers improved thermal and power efficiency, up to 30 day standby, faster resume time, enhanced security, as well as anti-tampering measures			
Display	Some: 15.6" (396mm) FHD (1920x1080), anti-glare, LED backlight, 300 nits, 16:9 aspect ratio, 500:1 contrast ratio Some: 15.5" (394mm) 3K (2880x1620), anti-glare, LED backlight, 350 nits, 16:9 aspect ratio, 1000:1 contrast ratio, IPS								vPro (optional)	Intel vPro Technology			
									Fingerprint reader	Optional: Fingerprint reader on the palm rest, swipe sensor			
Multi-touch	None								Color calibration	Optional: Pantone® color calibrator by X-Rite® color calibration sensor in palm rest, LED indicator			
									Battery type	Li-Ion 6-cell (56Wh) or 9-cell (99.9Wh), HW Authentication			
Storage	Some: SSD / SATA 6.0Gb/s, 2.5" wide, 7mm high Some: HDD / SATA 6.0Gb/s, 2.5" wide, 7mm or 9.5mm high, Shock Mounted Hard Drive, Active Protection System™ All: removable, upgradable, supports the second disk								Max battery life <sup>10</sup>	6-cell: up to 6.2 hr; 9-cell: up to 11.1 hr			
									AC adapter	dual-core: 135W AC adapter; quad-core: 170W AC adapter			
M.2 SSD (opt)	16GB M.2 Solid State Drive (SSD), via M.2 card slot, exclusive with WWAN card								Preload	Windows® 7 Professional 64 preinstalled			
										through downgrade rights in Windows 8 / 8.1 Pro 64-bit or Windows 10 Pro 64			
Optical (optional)	DVD burner, 9.5mm Ultrabay slim, removable									Some: Windows 8.1 Pro 64-bit			
										Some: Windows 10 Pro 64			
Ultrabay	One modular bay for removable devices (right side, cold swap), 9.5mm high, bottom access									Some: Windows 8.1 64-bit			
										Some: Windows 10 Pro 64			
Ethernet	Intel Ethernet Connection I217-LM (Clarkville)									• Lenovo Solution Center			
										• Lenovo SHAREit			
Bluetooth™	Bluetooth 4.0 wireless, integrated in Wi-Fi + Bluetooth combo adapter									• Lenovo REACHit			
										• Lenovo Companion			
WLAN <sup>4</sup>	One of the following, configurable by model: • 11b/g/n, ThinkPad 11b/g/n, 2x2, Wi-Fi + Bluetooth combo adapter, M.2 card • 11b/g/n, Intel Wireless-N 7260, 2x2, Wi-Fi + BT combo adapter, M.2 card • 11a/b/g/n, Intel Dual Band Wireless-N 7260, 2x2, Wi-Fi + BT adapter, M.2 card • 11ac, Intel Dual Band Wireless-AC 7260, 2x2, Wi-Fi + BT adapter, M.2 card									• Microsoft Office preloaded;			
										• Microsoft Office preloaded; purchase a product key to activate			
WWAN (optional)	One of the following, configurable by model (mutually exclusive with M.2 SSD): • Wireless WAN upgradable • Wireless WAN, Sierra Wireless EM7355, Qualcomm® Gobi™ 4G LTE/HSPA+/EVDO/GSM/GPRS/EDGE, GPS, M.2 card (US models) • Wireless WAN, Ericsson® N5321, HSPA+ 21Mbps/GSM/GPRS/EDGE, GPS, M.2 card (WE models) • Wireless WAN, Sierra Wireless EM7345, Intel 4G LTE/HSPA/GSM/GPRS/EDGE, GPS, M.2 card (WE models)									• Norton Internet Security (30 days of virus definitions, Win8 w/o i5/i7 model)			
										• McAfee® LiveSafe™ (30-day trial, Win8 i5/i7 and Win10 model)			
SIM card (optional)	One of the following, configurable by model: • AT&T® or Verizon® LTE (4G), contract required with service provider • User selectable, contract required with service provider									For ISV certifications, please visit <a href="http://www.lenovo.com/support/ISV">www.lenovo.com/support/ISV</a>			
									Limited warranty <sup>12</sup>	One of the following, configurable by model: • 1-year depot repair service • 3-year/1-yr battery depot repair service • 3-year/1-yr battery limited onsite service <sup>24</sup> • 3-year/1-yr battery limited onsite service, OID (Onsite International Delivery)			
									Mil-Spec test	MIL-STD-810G military certification			
									Environment	EPEAT™ Gold; ENERGY STAR® 6.1; GREENGUARD®; RoHS-compliant			